IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

APPEAL NO:

Gordon Taylor DAVIS, et al. Confirmation No: 5730

Serial No: 09/941,043 Group Art Unit: 2151

Filed: August 28, 2001 Examiner: Tran, Nghi V.

For: METHOD AND SYSTEM FOR DELINEATING DATA SEGMENTS SUBJECTED TO DATA COMPRESSION

APPEAL BRIEF

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Mail Stop Appeal Brief – Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

APPEAL BRIEF

Sir:

Appellant herein files an Appeal Brief drafted in accordance with the provisions of 37 C.F.R. § 1.193(b)(1) as follows:

I. REAL PARTY IN INTEREST

Appellant respectfully submits that the above-captioned application is assigned, in its entirety to International Business Machines Corporation of Armonk, New York.

II. RELATED APPEALS AND INTERFERENCES

Appellant states that, upon information and belief, Appellant is not aware of any co-pending appeal or interference which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

III. STATUS OF CLAIMS

Claims 1-5, 8-14, and 17-22 are pending. Application Serial No. 09/941,043 (the instant application) as originally filed included claims 1-22. In response to an Office Action dated June 15, 2005, claims 1, 2, 5, 8, 9, 10, 11, 17, 18, 19, 20, 21, and 22 were amended. Claims 6-7 and 15-16 were also canceled. Claims 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 14, 17, 18, 19, 20, 21, and 22 are on appeal and all applied prospective rejections concerning claims 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 14, 17, 18, 19, 20, 21, and 22 are herein being appealed.

IV. STATUS OF AMENDMENT

There was no proposed amendment to the claims in response to the Final Office Action.

V. SUMMARY OF THE INVENTION

The present invention provides a method and system for compressing and transmitting data using asynchronous transform mode (ATM). The data include a plurality of segments. Each of the plurality of segments has a first end and a second end. In one aspect, the method and system comprise representing the first end of a segment with a partition code word and compressing a remaining portion of the segment. In another aspect, the method and system comprise representing the first end of a segment with a partition code word, transmitting the partition code word, and transmitting one or more compression code words corresponding to a remaining portion of the segment. In yet another aspect, the partition code word can become the root of one or more compound code words used to compress multiple characters (bytes) into a single compound codeword (the basic mechanism of LZ compression). In another aspect of the invention, the partition code word may be replaced by a transparent mode special command in

the case where compression is disabled due to encountering uncompressible data or to user selection. Specification, page 5, line 19-page 6, line 8.

Figure 1 depicts a conventional network 1 through which traffic is driven, for example using ATM. Specification, page 1, line 7-page 2, line 5. Figure 2 depicts a conventional ATM packet data unit (PDU) 10 that is used in transporting IP packets. The ATM PDU 10 includes a header 12, additional information 14, data for the IP packet 16 and, in some cases, the padding 18. Specification, page 2, lines 6-15. In order to transport the ATM PDU across the conventional network 10, or to other networks (not shown), an ATM PDU may be partitioned into one or more ATM cells. Figure 3 depicts a conventional bitstream including ATM cells 20, 20' and 20''. Specification, page 2, lines 22-23. Each of the ATM cells 20, 20', and 20'' includes a payload 24, 24', and 24''. See, Figure 3. The ATM PDU 10 is contained in the payload 24, 24', or 24'', which is typically scrambled to aid in the detection of ATM cell boundaries. Specification, page 2, line 22-page 3, line 13. Although the conventional ATM PDU 10 may be sent using the conventional bitstream 30, such a mechanism may be inefficient and may complicate compression of the ATM cells 20, 20' and 20''. Specification, page 3, line 14-page 5, line 14.

In contrast, Figure 4 depicts one embodiment of a method in accordance with the present invention for improving the transmission efficiency of the network using ATM. It is determined whether data compression is active. If so, then a boundary of a segment is represented using a code word and the remainder of the segment is compressed if compression is desired. Specification, page 9, line 8-page 10, line 2. Note that Figure 5 depicts one embodiment of a method that can be used in compressing data in the method described in Figure 4. Specification, page 11, line 5-page 13, line 4. If compression is not desired, then a transparent mode command

is inserted to reflect a segment boundary. Specification, page 10, lines 2-6. The remaining portion of the segment is inserted without compression. Specification, page 10, lines 6-8. Note that Figure 6 depicts one embodiment of a method that can be used for data not be compressed in the method described in Figure 4. The segment is then transmitted. Specification, page 10, lines 8-9. Figures 7 and 8 depict IP packets and a bitstream including ATM PDUs with which the method described in Figure 5 has been used.

In the method of Figure 5, the segments might be IP packets in an ATM PDU or ATM PDUs in an ATM cell. Specification, page 10, line 16-page 11, line 2. Because the IP packets and/or ATM PDUs can identified using the code words and, in some embodiments, compressed, the IP packets and/or ATM PDUs may be more efficiently packed. Specification, page 10, line 16-page 11, line 2. Consequently, the efficiency of transmission may be improved. Specification, page 14, lines 15-17 and page 15, lines 12-13.

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

(1) whether claims 1-2, 11, 18-19 are each unpatentable under 35 U.S.C. § 103 as being obvious in light of U.S. Patent No. 5,870,036 (Franaszek) in view of U.S. Patent No. 6,151,318 (Woodward);

(2) whether claims 3 and 12 are each unpatentable under 35 U.S.C. § 103 as being obvious over Franaszek and Woodward in further view of U.S. Patent No. 5,822,321 (Peterson); and

(3) whether claims 4-5 and 13-14 are each unpatentable under 35 U.S.C. § 103 as being obvious over Franaszek and Woodward in further view of Patent No. 5,389,922 (Seroussi).

VII. ARGUMENTS

A. Summary of the Applied Rejections

In the Final Office Action, dated October 11, 2005, the Examiner rejected claims 1-2, 11, 18-19 under 35 U.S.C. § 103 as being unpatentable over Franaszek in view of Woodward. In so doing, the Examiner relied upon Franaszek as teaching representing the first end of a segment with a partition code word. Although the Examiner did not specify the grounds of rejection for claims 17 and 20-22, Appellant presumes that the Examiner rejected these claims under Franaszek in view of Woodward.

The Examiner also rejected claims 3 and 12 under 35 U.S.C. § 103 as being unpatentable over Franaszek and Woodward in further view of Peterson. The Examiner further rejected claims 4-5 and 13-14 in view of Franaszek and Woodward in further view of Seroussi.

Appellant respectfully requests that the Board reverse the Examiner's final rejection of claims 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 14, 17, 18, 19, 20, 21, and 22 under 35 U.S.C. § 103.

B. The Cited Prior Art

Franaszek describes a system that performs compression and decompression. Franaszek, Abstract. The cited portions of Franaszek describe compressing blocks of data. Franaszek, col. 4, lines 14-20. In order to perform the compression, Franaszek selects an optimal compression method from a number of compression methods (including leaving the block uncompressed) for each block. Franaszek, col. 5, lines 19-33. The system of Franaszek uses an identifier to indicate whether the block has been compressed using a dictionary. Franaszek, col. 4, lines 46-49. The dictionary includes "dictionary blocks" that are stored in memory and accessed using an index that indicates the offset (or start) of a dictionary block. Franaszek, col. 4, lines 50-51. If

the block is compressed using a dictionary, and thus dictionary blocks, Franaszek utilizes an identifier for the dictionary block to which the block being compressed corresponds. Thus, the block being compressed is replaced by data including an index indicating the compression method used (e.g. which dictionary based method or which non-dictionary based method), an identifier for the dictionary block, and a compression method description. Franaszek, col. 4, lines 55-59.

Woodward describes a system for encapsulating ATM cells into larger data packets to be transmitted through a particular system. Woodward, Abstract. To do so, Woodward describes placing multiple ATM cells, which are optionally compressed, in the larger data packet. Woodward, Abstract. In order to delineate ATM cells, Woodward describes utilizing a payload of "exactly" 106 bytes to ensure that the boundaries of the ATM cells occur at system packet boundaries. Woodward, col. 2, lines 62-67. Woodward then describes utilizing a "fragment type" to indicate the number of ATM cells within the system packet. Woodward, col. 3, lines 41-56. Woodward also describes compressing ATM cells and placing multiple ATM cells across system packets. In such a system Woodward describes using the fragment type to differentiate between how ATM cells are packed in the system packets. Woodward, col. 4, line 59-col. 5, line 3. Woodward further utilizes the fragment types to indicate whether the packet is a start of a multi-fragment set of packets, an intermediate packet in a multi-fragment set of packets, the last of a multi-fragment set of packets, of a single fragment case—a packet that carries no more than two ATM cells. Woodward, col. 5, lines 5-19. Woodward also describes the particular case where ATM cells happen to contain identical headers and the utility of the compression scheme used by Woodward in this special case. Woodward, col. 6, lines 35-41. ATM cells only contain identical headers when the ATM cells share a common recipient. Woodward, col. 2, lines 42-50.

Peterson describes a method and apparatus for segmenting and reassembling user data packets. Peterson, Abstract. In particular, Peterson describes the benefits of segmenting data transmission into smaller packets. Peterson, col. 1, lines 8-11 and 21-29. To obtain these benefits, Peterson describes segmenting cells into two or more segments, inserting the segments into "minicells", and multiplexing the minicells into one or more data cells. Peterson, col. 2, lines 34-40. The cited figure of Peterson, Fig. 5 merely shows that the start of a particular one of such segments corresponds with the start of a particular data packet.

Seroussi describes a dictionary initialization scheme. Seroussi, Abstract. As such, Seroussi does teach that data can be encoded. See, for example, Seroussi, Abstract. Seroussi also describes that the data can be encoded by building code words based on previous code words by using the previous code word plus at least one other code word representing remaining characters in the tail. Seroussi, Abstract.

C. Claims 1-2, 11, 18-19 Are Not Unpatentable Under 35 U.S.C. § 103.

Appellant respectfully submits that the applied rejections of claims 1-2, 11, and 18-19 under 35 U.S.C. § 103 are without merit as the Examiner has completely failed to explain why Franaszek in view of Woodward teach or suggest the limitations recited in independent claims 1, 11, 18, and 19. Claim 1 recites:

> 1. A method for compressing data for transmission using asynchronous transfer mode (ATM), the data including a plurality of segments, each of the plurality of segments including a first end and a second end, the method comprising the steps of:
>
> representing the first end of a segment of the plurality of segments with a partition compression code word, the segment being at least one of an ATM cell, an ATM PDU and an IP packet, the first end being a boundary of the ATM cell, the ATM PDU or the IP packet;
>
> compressing a remaining portion of the segment.

Similarly, claim 11 recites:

> 11. A system for compressing data for transmission using asynchronous transfer mode (ATM), the data including a plurality of segments, each of the plurality of segments including a first end and a second end, the system comprising:
>
> means for representing the first end of a segment of the plurality of segments with a partition compression code word, the segment being at least one of an ATM cell, an ATM PDU and an IP packet, the first end being a boundary of the ATM cell, the ATM PDU or the IP packet; and
>
> means for compressing a remaining portion of the segment.

Claim 18 recites:

> 18. A system for transmitting data using asynchronous transfer mode (ATM), the data including a plurality of segments, each of the plurality of segments including a first end and a second end, the system comprising the steps of:
>
> means for representing the first end of a segment of the plurality of segments with a transparent mode command, the segment being at least one of an ATM cell, an ATM PDU and an IP packet, the first end being a boundary of the ATM cell, the ATM PDU or the IP packet;
>
> means for transmitting the transparent mode command and a remaining portion of the segment.

Similarly, claim 19 recites:

> 19. A computer-readable medium containing a program for compressing data for transmission using asynchronous transfer mode (ATM), the data including a plurality of segments, each of the plurality of segments including a first end and a second end, the program including instructions for:
>
> representing the first end of a segment of the plurality of segments with a partition compression code word, the segment being at least one of an ATM cell, an ATM PDU and an IP packet, the first end being a boundary of the ATM cell, the ATM PDU or the IP packet;
>
> compressing a remaining portion of the segment.

Using the methods, systems, and computer-readable media recited in claims 1, 8-11, and 17-22, data may be transmitted in packets such that the boundaries of IP packets, ATM PDUs and/or ATM cells are delineated. Consequently, multiple IP packets may be placed in an ATM PDU, more ATM cells may be placed in a particular bit stream, compression may be made more

efficient and network performance may be improved. Specification, page 9, lines 17-20, page 12, lines 8-19, and page 13, lines 10-18.

Franaszek in view of Woodward fail to teach or suggest representing a first end of a segment with a partition compression code word or a transparent mode command. As discussed above, Franaszek describes compressing blocks of data. Furthermore, as part of the compression, Franaszek describes information placed in the compressed block. Although this information may identify *dictionary blocks* used, Franaszek fails to describe representing the first end of a *segment being compressed* with a compression code word or a transparent mode command. Similarly, although an index may be used represent the start of a *dictionary block* stored *in memory*, Appellant can find no mention in Franaszek of a similar index or code word being used to represent the start of a *segment being compressed.* Consequently, although Franaszek functions well for its intended purpose, Franaszek fails to teach or suggest the methods, systems, and computer-readable media recited in claims 1, 11, 18, and 19.

Woodward fails to remedy the defects of Franaszek. As discussed above, Woodward describes transmission of data using ATM cells. However, Woodward also fails to teach or suggest representing a first end of the segment being compressed with a compression code word or a transparent mode command. Instead, payloads of certain sizes are used to ensure that the ATM cell boundaries occur where desired. Woodward, col. 2, lines 62-67. A code, termed a "fragment type" is used to indicate the *number* of ATM cells within the system packet or to differentiate how packets are packed in a cell, not the start of a cell boundary. Woodward, col. 3, lines 41-56 and col. 4, line 59-col. 5, line 3. Woodward further utilizes the fragment types to indicate whether the packet is a start of a multi-fragment set of packets, an intermediate packet in a multi-fragment set of packets, the last of a multi-fragment set of packets, of a single fragment

case—a packet that carries no more than two ATM cells. Woodward, col. 5, lines 5-19. However, none of these uses indicates that the "fragment type" of Woodward marks the start of a segment.

Because both Woodward and Franaszek fail to teach or suggest representing a first end of the segment being compressed with a compression code word or a transparent mode command, any combination would fail to teach or suggest this feature. Stated differently, if the teachings of Woodward were added to those of Franaszek, the system of Franaszek might pack the dictionary code words into the appropriate sized payloads using the teachings of Woodward. The addition of Woodward might also provide additional support for the teachings of Woodward to be used in conjunction with ATM. However, the combination would still simply select a method of compression and in the compressed data provide an index indicating the compression method (e.g. which dictionary based method or which non-dictionary based method) used, an identifier for the dictionary block, and a compression method description for a block of ATM data. Furthermore, the fragment type of Woodward might be utilized to indicate certain features of the compression used by the combination. However, the combination would still not use a compression code word or transparent mode command to represent the first end of a segment. Consequently, Franaszek in view of Woodward fails to teach or suggest the methods, systems, and computer-readable media recited in claims 1, 11, and 18-19. Accordingly, Appellant respectfully submits that independent claims 1, 11, and 18-19 are allowable over the cited references.

Claim 2 depends upon independent claim 1. Consequently, claim 2 is allowable for the same reasons discussed above with respect to claims 1, 11, and 18-19.

Accordingly Appellant respectfully requests that the Board reverse the final rejection of claims 1, 2, 11, 18, and 19 under 35 U.S.C. § 103.

D. Claims 3 and 12 Are Not Unpatentable Under 35 U.S.C. § 103.

Appellant respectfully submits that the applied rejections of claims 3 and 12 under 35 U.S.C. § 103 are without merit as the Examiner has completely failed to explain why Franaszek in view of Woodward in further view of Peterson teaches or suggests the method and system recited in claims 3 and 12.

Claims 3 and 12 depend upon independent claims 1 and 11, respectively. Consequently, the arguments herein with respect to Franaszek and Woodward apply with full force to claims 3 and 12. In particular, Franaszek in view of Woodward fails to teach or suggest representing a first end of a segment with a compression code word or a transparent mode command.

Peterson fails to remedy the defects of Franaszek and Woodward. Appellant agrees that Peterson describes the first end of the segment placed in a packet being the start of a segment. Peterson, Fig. 5. Peterson also describes the benefits of segmenting data transmission into smaller packets. Peterson, col. 1, lines 8-11 and 21-29. However, the cited portion of Peterson fails to describe using a code word to represent a boundary of an IP packet, an ATM PDU, and/or an ATM cell. Consequently, any combination of Franaszek and Woodward in view of Peterson would also fail to teach such a feature. Stated differently, if Peterson were added to the combination of Franaszek and Woodward, the combination might ensure that the start of a segment was located at a particular part of the packet into which the segment is being placed. However, the combination would still not utilize a code word to represent the boundary of the segment, such as an IP packet, an ATM PDU, and/or an ATM cell. Consequently, any combination of Franaszek and

Woodward in view of Peterson fails to teach or suggest the method and system recited in claims 3 and 12, respectively. Accordingly, Appellant respectfully submits that claims 3 and 12 are allowable over the cited references.

Accordingly Appellant respectfully requests that the Board reverse the final rejection of claims 3 and 12 under 35 U.S.C. § 103.

E. Claims 4-5 and 13-14 Are Not Unpatentable Under 35 U.S.C. § 103.

Appellant respectfully submits that the applied rejections of claims 4-7 and 13-14 under 35 U.S.C. § 103 are without merit as the Examiner has completely failed to explain why Franaszek and Woodward in further view of Seroussi teaches or suggests the method and system recited in claims 4-5 and 13-14.

Claims 4-5 and 13-14 depend upon independent claims 1 and 11, respectively. Consequently, the arguments herein with respect to Franaszek and Woodward apply with full force to claims 4-5 and 13-14. In particular, Franaszek in view of Woodward fails to teach or suggest representing a first end of a segment with a compression code word or a transparent mode command.

Seroussi fails to remedy the defects of Franaszek and Woodward. Although Seroussi describes encoding data, Seroussi still fails to describe representing a first end of a segment with a compression code word or a transparent mode command. Instead, the cited portion of Seroussi describes variations of Lempel-Ziv encoding. In particular, the cited portion of Seroussi describes encoding variable length strings. However, Appellant has found no mention in Seroussi of representing a first end of a segment with a compression code word or a transparent mode command. Thus, Seroussi fails to remedy the defects of Franaszek and Woodward. Stated

differently, if Seroussi were added to the combination of Franaszek and Woodward, the combination might use the encoding schemes described by Seroussi. However, the combination would still not represent the first end of a segment with a compression code word or a transparent mode command. Consequently, any combination of Franaszek and Woodward in view of Seroussi fails to teach or suggest the method and system recited in claims 4-5 and 14-15. Accordingly, Appellant respectfully submits that claims 4-5 and 14-15are allowable over the cited references.

Accordingly Appellant respectfully requests that the Board reverse the final rejection of claims 4-5 and 13-14 under 35 U.S.C. § 103.

F. Claims 8-10, 17, and 20-22 Are Not Unpatentable Under 35 U.S.C. § 102 or § 103.

Appellant respectfully submits that the any rejection of claims 8-10, 17, and 20-22 under 35 U.S.C. § 102 or § 103 is without merit as the Examiner has completely failed to explain why Franaszek and Woodward in further view of Seroussi and/or Peterson teaches or suggests the method and system recited in claims 8-10, 17, and 20-22.

In the above-identified Final Office Action, the Examiner did not indicate a specific reason for rejecting claims 8-10, 17, and 20-22. However, Applicant assumes that the Examiner rejects the claims under some combination of Franaszek, Woodward, Seroussi, and/or Peterson. Appellant respectfully disagrees with any such rejection. Claim 8 recites

> 8. A method for compressing data for transmission using asynchronous transfer mode (ATM), the data including a plurality of segments, each of the plurality of segments including a first end and a second end, a dictionary being used in compressing the data, the method comprising the steps of:
>
> representing the first end of a segment of the plurality of segments with a partition compression code word, the partition compression code word representing a partition command sequence, the segment being at

least one of an ATM cell, an ATM PDU and an IP packet, the first end being a boundary of the ATM cell, the ATM PDU or the IP packet;

adding bytes to a string including the command sequence representing the first end of the segment until the string does not have a match in the dictionary;

adding a code word to the dictionary, the code word including the partition command sequence as a root, the code word representing the string if the string is obtained in a first iteration;

utilizing the code word in the dictionary to represent the string if the string is not obtained in the first iteration;

compressing a remainder of the segment, if any.

Similarly, claim 10 recites:

10. A method for transmitting data using asynchronous transfer mode (ATM), the data including a plurality of segments, each of the plurality of segments including a first end and a second end, the method comprising the steps of:

representing the first end of a segment of the plurality of segments with a transparent mode command, the segment being at least one of an ATM cell, an ATM PDU and an IP packet, the first end being a boundary of the ATM cell, the ATM PDU or the IP packet;

transmitting the transparent mode command; and

transmitting a remaining portion of the segment.

Similarly, independent claim 17 recites:

17. A system for compressing data for transmission using asynchronous transfer mode (ATM), the data including a plurality of segments, each of the plurality of segments including a first end and a second end, a dictionary being used in compressing the data, the system comprising:

means for representing the first end of a segment of the plurality of segments with a partition compression code word representing a partition command sequence, the segment being at least one of an ATM cell, an ATM PDU and an IP packet, the first end being a boundary of the ATM cell, the ATM PDU or the IP packet;

means for adding bytes to a string including the first end of the segment until the string does not have a match in the dictionary;

means for adding a code word to the dictionary, the code word including the partition command sequence as a root, the code word representing the string if the string is obtained in a first iteration;

means for utilizing the code word in the dictionary to represent the string if the string is not obtained in the first iteration;

means for compressing a remainder of the segment, if any.

Independent claim 20 recites:

> 20. A computer-readable medium containing a program for compressing data for transmission using asynchronous transform mode (ATM), the data including a plurality of segments, each of the plurality of segments including a first end and a second end, a dictionary being used in compressing the data, the program including instructions for:
>
> representing the first end of a segment of the plurality of segments with a partition compression code word, the partition compression code word representing a partition command sequence, the segment being at least one of an ATM cell, an ATM PDU and an IP packet, the first end being a boundary of the ATM cell, the ATM PDU or the IP packet;
>
> adding bytes to a string including the first end of the segment until the string does not have a match in the dictionary;
>
> adding a code word to the dictionary, the code word including the partition command sequence as a root, the code word representing the string if the string is obtained in a first iteration;
>
> utilizing the code word in the dictionary to represent the string if the string is not obtained in the first iteration;
>
> compressing a remainder of the segment, if any.

Independent claim 21 recites:

> 21. A computer-readable medium containing a program for transmitting data using asynchronous transfer mode (ATM), the data including a plurality of segments, each of the plurality of segments including a first end and a second end, a dictionary being used in compressing the data, the program including instructions for:
>
> representing the first end of a segment of the plurality of segments with a partition compression code word, the segment being at least one of an ATM cell, an ATM PDU and an IP packet, the first end being a boundary of the ATM cell, the ATM PDU or the IP packet;
>
> transmitting the partition compression code word;
>
> compressing a remaining portion of the segment; and
>
> transmitting the remaining portion of the segment.

Independent claim 22 recites:

> 22. A computer-readable medium containing a program for transmitting data using asynchronous transfer mode (ATM), the data including a plurality of segments, each of the plurality of segments including a first end and a second end, the program including instructions for:
>
> representing the first end of a segment of the plurality of segments with a transparent mode command, the segment being at least one of an ATM cell, an ATM PDU and an IP packet, the first end being a boundary of the ATM cell, the ATM PDU or the IP packet;

transmitting the transparent mode command; and
transmitting a remaining portion of the segment.

Thus, independent claims 8, 17, 20, 21, and 22 all recite recites methods, systems, and computer-readable media which recite representing the first end of a segment with a partition compression code word or a transparent mode command. Consequently, the arguments herein with respect to Franaszek, Woodward, Peterson, and Seroussi apply with full force to claims 8-10, 17, and 20-22. Thus, Appellant respectfully submits that claims 8-10, 17, and 20-22 are allowable over the cited references.

Accordingly Appellant respectfully requests that the Board reverse the final rejection of claims 8-10, 17, and 20-22.

G. Summary of Arguments

For all the foregoing reasons, it is respectfully submitted that Claims 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 14, 17, 18, 19, 20, 21, and 22 (all the claims presently in the application) are patentable for defining subject matter which would not have been obvious under 35 U.S.C. § 103 or anticipated under 35 U.S.C. § 102(e) at the time the subject matter was invented. Thus, Appellant respectfully requests that the Board reverse the rejection of all the appealed Claims and find each of these Claims allowable.

Authorization for payment of the required Brief fee is contained in the transmittal letter for this Brief. Please charge any fee that may be necessary for the continued pendency of this application to Deposit Account No. 50-0563 (IBM Corporation).

Very truly yours,

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March 27, 2006

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VIII. CLAIMS APPENDIX

1. A method for compressing data for transmission using asynchronous transfer mode (ATM), the data including a plurality of segments, each of the plurality of segments including a first end and a second end, the method comprising the steps of:

representing the first end of a segment of the plurality of segments with a partition compression code word, the segment being at least one of an ATM cell, an ATM PDU and an IP packet, the first end being a boundary of the ATM cell, the ATM PDU or the IP packet;

compressing a remaining portion of the segment.

2. The method of claim 1 further comprising the step of:

repeating the representing and compressing steps and for each of a remaining portion of the plurality of segments.

3. The method of claim 1 wherein the first end is a start of the segment.

4. The method of claim 1 wherein the partition compression code word represents a partition command sequence.

5. The method of claim 4 wherein the representing step ~~(a)~~ further includes the step of:

providing a compound compression code word to represent the partition command sequence and another portion of the segment, the partition command sequence representing the first end of the segment.

6. Canceled

7. Canceled

8. A method for compressing data for transmission using asynchronous transfer mode (ATM), the data including a plurality of segments, each of the plurality of segments including a first end and a second end, a dictionary being used in compressing the data, the method comprising the steps of:

representing the first end of a segment of the plurality of segments with a partition compression code word, the partition compression code word representing a partition command sequence, the segment being at least one of an ATM cell, an ATM PDU and an IP packet, the first end being a boundary of the ATM cell, the ATM PDU or the IP packet;

adding bytes to a string including the command sequence representing the first end of the segment until the string does not have a match in the dictionary;

adding a code word to the dictionary, the code word including the partition command sequence as a root, the code word representing the string if the string is obtained in a first iteration;

utilizing the code word in the dictionary to represent the string if the string is not obtained in the first iteration;

compressing a remainder of the segment, if any.

9. A method for transmitting data using asynchronous transfer mode (ATM), the data including a plurality of segments, each of the plurality of segments including a first end and a second end, a dictionary being used in compressing the data, the method comprising the steps of:

representing the first end of a segment of the plurality of segments with a partition compression code word, the segment being at least one of an ATM cell, an ATM PDU and an IP packet, the first end being a boundary of the ATM cell, the ATM PDU or the IP packet;

transmitting the partition compression code word; and

compressing a remaining portion of the segment;

transmitting the remaining portion of the segment.

10. A method for transmitting data using asynchronous transfer mode (ATM), the data including a plurality of segments, each of the plurality of segments including a first end and a second end, the method comprising the steps of:

representing the first end of a segment of the plurality of segments with a transparent mode command, the segment being at least one of an ATM cell, an ATM PDU and an IP packet, the first end being a boundary of the ATM cell, the ATM PDU or the IP packet;

transmitting the transparent mode command; and

transmitting a remaining portion of the segment.

11. A system for compressing data for transmission using asynchronous transfer mode (ATM), the data including a plurality of segments, each of the plurality of segments including a first end and a second end, the system comprising:

means for representing the first end of a segment of the plurality of segments with a partition compression code word, the segment being at least one of an ATM cell, an ATM PDU and an IP packet, the first end being a boundary of the ATM cell, the ATM PDU or the IP packet; and

means for compressing a remaining portion of the segment.

12. The system of claim 11 wherein the first end is a start of the segment.

13. The system of claim 11 wherein the partition compression code word represents a partition command sequence.

14. The system of claim 13 wherein the representing means further includes means for:

providing a compound compression code word to represent the partition command sequence and another portion of the segment, the partition command sequence representing the first end of the segment.

15. Canceled

16. Canceled

17. A system for compressing data for transmission using asynchronous transfer mode (ATM), the data including a plurality of segments, each of the plurality of segments including a

first end and a second end, a dictionary being used in compressing the data, the system comprising:

means for representing the first end of a segment of the plurality of segments with a partition compression code word representing a partition command sequence, the segment being at least one of an ATM cell, an ATM PDU and an IP packet, the first end being a boundary of the ATM cell, the ATM PDU or the IP packet;

means for adding bytes to a string including the first end of the segment until the string does not have a match in the dictionary;

means for adding a code word to the dictionary, the code word including the partition command sequence as a root, the code word representing the string if the string is obtained in a first iteration;

means for utilizing the code word in the dictionary to represent the string if the string is not obtained in the first iteration;

means for compressing a remainder of the segment, if any.

18. A system for transmitting data using asynchronous transfer mode (ATM), the data including a plurality of segments, each of the plurality of segments including a first end and a second end, the system comprising the steps of:

means for representing the first end of a segment of the plurality of segments with a transparent mode command, the segment being at least one of an ATM cell, an ATM PDU and an IP packet, the first end being a boundary of the ATM cell, the ATM PDU or the IP packet;

means for transmitting the transparent mode command and a remaining portion of the segment.

19. A computer-readable medium containing a program for compressing data for transmission using asynchronous transfer mode (ATM), the data including a plurality of segments, each of the plurality of segments including a first end and a second end, the program including instructions for:

representing the first end of a segment of the plurality of segments with a partition compression code word, the segment being at least one of an ATM cell, an ATM PDU and an IP packet, the first end being a boundary of the ATM cell, the ATM PDU or the IP packet;

compressing a remaining portion of the segment.

20. A computer-readable medium containing a program for compressing data for transmission using asynchronous transform mode (ATM), the data including a plurality of segments, each of the plurality of segments including a first end and a second end, a dictionary being used in compressing the data, the program including instructions for:

representing the first end of a segment of the plurality of segments with a partition compression code word, the partition compression code word representing a partition command sequence, the segment being at least one of an ATM cell, an ATM PDU and an IP packet, the first end being a boundary of the ATM cell, the ATM PDU or the IP packet;

adding bytes to a string including the first end of the segment until the string does not have a match in the dictionary;

adding a code word to the dictionary, the code word including the partition command sequence as a root, the code word representing the string if the string is obtained in a first iteration;

utilizing the code word in the dictionary to represent the string if the string is not obtained in the first iteration;

compressing a remainder of the segment, if any.

21. A computer-readable medium containing a program for transmitting data using asynchronous transfer mode (ATM), the data including a plurality of segments, each of the plurality of segments including a first end and a second end, a dictionary being used in compressing the data, the program including instructions for:

representing the first end of a segment of the plurality of segments with a partition compression code word, the segment being at least one of an ATM cell, an ATM PDU and an IP packet, the first end being a boundary of the ATM cell, the ATM PDU or the IP packet;

transmitting the partition compression code word;

compressing a remaining portion of the segment; and

transmitting the remaining portion of the segment.

22. A computer-readable medium containing a program for transmitting data using asynchronous transfer mode (ATM), the data including a plurality of segments, each of the plurality of segments including a first end and a second end, the program including instructions for:

representing the first end of a segment of the plurality of segments with a transparent mode command, the segment being at least one of an ATM cell, an ATM PDU and an IP packet, the first end being a boundary of the ATM cell, the ATM PDU or the IP packet;

transmitting the transparent mode command; and

transmitting a remaining portion of the segment.

IX. EVIDENCE APPENDIX

X. RELATED PROCEEDINGS APPENDIX

TRANSMITTAL FORM

Attorney Docket No. **RAL920010013US1/2063P**

In re the application of: **Gordon TODAVIA, et al.**

Confirmation No: **5730**

Serial No: **09/941,043**

Group Art Unit: **2151**

Filed: **August 28, 2001**

Examiner: **Tran, Nghi V.**

For: **Method and System for Detecting Data Segments Subjected To Data Compression**

ENCLOSURES *(check all that apply)*					
☐	Amendment/Reply	☐	Assignment and Recordation Cover Sheet	☐	After Allowance Communication to Group
	☐ After Final	☐	Part B-Issue Fee Transmittal	☐	Notice of Appeal
☐	Information disclosure statement	☐	Letter to Draftsman	■	Appeal Brief
	☐ Form 1449	☐	Drawings	☐	Status Letter
	☐ (X) Copies of References	☐	Petition	■	Postcard
☐	Extension of Time Request *	☐	Fee Address Indication Form	☐	Other Enclosure(s) (*please identify below):*
☐	Express Abandonment	☐	Terminal Disclaimer		
☐	Certified Copy of Priority Doc	☐	Power of Attorney and Revocation of Prior Powers		
☐	Response to Incomplete Appln	☐	Change of Correspondence Address		
☐	Response to Missing Parts	*Extension of Term: Pursuant to 37 CFR 1.136, Applicant petitions the Commissioner to extend the time for response for xxxxxx month(s), from to .			
	☐ Executed Declaration by Inventor(s)				

CLAIMS

FOR	Claims Remaining After Amendment	Highest # of Claims Previously Paid For	Extra Claims	RATE	FEE
Total Claims	0	0	0	$ 50.00	$ 0.00
Independent Claims	0	0	0	$200.00	$ 0.00
				Total Fees	$ 0.00

METHOD OF PAYMENT

☐	Check no. _____ in the amount of $ _____ is enclosed for payment of fees.
■	Charge $ 500.00 to Deposit Account No. 50-0563 (IBM Corporation) for payment of Appeal Brief filing fee.
■	Charge any additional fees or credit any overpayment to Deposit Account No. 50-0563 (IBM Corporation)

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Attorney Name	Joseph A. Sawyer, Jr.
Signature	
Date	March 27, 2006

CERTIFICATE OF TRANSMISSION/MAILING

I hereby certify that this correspondence is being facsimile transmitted to the USPTO or deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Mail Stop Appeal Brief – Patents, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on **3/27/2006**.

Type or printed name	Kym Moore
Signature	